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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,136	01/05/2006	Yasushi Okubo	125493	4314
25944 7590 01/06/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
ROSASCO, STEPHEN D				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/551,136

**Applicant(s)**

OKUBO ET AL.

**Examiner**

Stephen Rosasco

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS-300)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 1/5/06, 7/26/07

### **Detailed Action**

The disclosure is objected to because of the following informalities: there are numerous spelling and grammatical errors in the specification, e.g., page 2, the last paragraph, the first sentence is unclear; page 4, middle, "...with the main surface of the side, on which the transfer pattern is formed, is directed toward the substrate to be subjected to transfer.", and later on "substrate to be deviated".

Appropriate correction is required.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In these claims, second line from the end the phrase "the transfer mask manufactured by the mask blank", should be changed to "from or with the mask blank".

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art

to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hata (7,226,705) or Kobayashi, et al. (7,238,454).

The claimed invention is directed to a mask blank, a method of making a mask blank, and a method of using said blank, the blank is an original plate for manufacturing a transfer mask, having on a substrate main surface a thin film, on which a transfer pattern is formed when the transfer mask is manufactured, and resist film, which is used when the transfer mask is manufactured, comprising on a peripheral edge of the substrate main surface: an auxiliary pattern forming region which is formed on the transfer mask, when the transfer mask is manufactured by the mask blank; and a supported region of the mask blank, which is a region to be supported by a substrate holding member of an exposure device when a transfer is carried out by using the transfer mask.

In the claimed invention the resist film 30 formed in the unnecessary region of the substrate peripheral edge is removed, which prevents it from coming into contact with the chuck part for grasping the photomask blank during transfer. In addition, the resist film of the supported region already exposed to light is also removed during formation of the transfer pattern in the development processing step in the transfer mask manufacturing step. Accordingly, the deformation of the reticle which is vacuum-chucked to the

substrate holding member of the exposure device, is prevented, because no level difference by the thickness of the thin film is generated, with the substrate in the supported region exposed, whereby the lowering of positional accuracy of the transfer pattern and the lowering of the focus accuracy can be suppressed to a minimum. Moreover, there is the non-exposure region, which is not exposed to light, in the auxiliary pattern forming region 32 except the supported region 31 formed in the peripheral edge of the substrate main surface, and the resist film 30 is not removed and remains even in the development processing step in the transfer mask manufacturing step. Therefore, no pattern defect of the auxiliary pattern is generated.

Hata teaches claims 1-4 (see claims 2+) including a mask blank, comprising: a base; a thin film on the base; a resist film, which has a center portion to be subsequently patterned and a circumferential portion surrounding the center portion, wherein the resist film is present on the center portion without being patterned; the resist film is present the resist film is present on a supplementary pattern area of the circumferential portion; the supplementary pattern area having a supplementary pattern formed on the thin film as a combination of (1) areas where the resist film remains on the supplementary pattern area and (2) areas where the resist film is selectively removed; and the resist film is absent from peripheral areas of the circumferential portion.

Kobayashi, et al. teaches claims 1 and 6 (see claims 1 and 3) - Claim 3 states a method of producing a photomask blank as claimed in claim 1 or 2, wherein said photomask blank is covered at least in its peripheral portion by a cover member with a predetermined distance left between a principal surface of said photomask blank and said cover member, said predetermined distance being selected so that said developer is filled exclusively in a gap defined by said predetermined distance for capillary action when said developer is supplied to said gap, said developer being supplied to said gap defining a developer supply area on said principal surface of said photomask blank so that said resist film formed in said portion of the edge of said substrate is removed.

The teachings of Hata or Kobayashi, et al. differ from those of the applicant in that the applicant teaches a region called the auxiliary region and limitations with respect to the supported region that are extremely general, including the supported region of the mask blank further comprising: wherein the region where no resist film is formed is the region selected in a range in which the transfer mask is held with a desired positional accuracy of the transfer pattern and a desired focus accuracy, when the transfer is performed by supporting the transfer mask manufactured by the mask blank, by the substrate holding member of the exposure device.

However, the problem to which the claimed invention is directed, that of residual resist left on the blank which creates problems when the blank is

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placed in the mask holder, is addressed by the cited art, and therefore, it would have been obvious to one having ordinary skill in the art to take the teachings of Hata or Kobayashi, and adjust the region dimensions and general layout of the mask in order to make the claimed invention because these would have been considered obvious modifications based on a specific design choice.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access

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to the Private PAIR system, contact the Electronic Business Center (EBC) at  
866-217-9197 (toll-free).

/S. Rosasco/

Primary Examiner, Art Unit

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S.Rosasco

12/30/08